UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/783,343	02/20/2004	David Wortendyke	MS1-1825US	7693

22801   7590   03/26/2007

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EXAMINER
SYED, FARHAN M

ART UNIT	PAPER NUMBER
2165	

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	03/26/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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PTOL-90A (Rev. 10/06)

	Application No.	Applicant(s)
Office Action Summary	10/783,343	WORTENDYKE ET AL.
	Examiner	Art Unit	
	Farhan M. Syed	2165	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>15 December 2006</u>.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-38</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-38</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on <u>20 February 2004</u> is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application
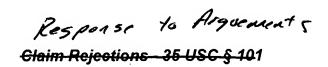
6) ☐ Other: _____ .

DETAILED ACTION

1.   Claims 1-38 are pending.

Response to Remarks

Drawing

2.   Applicant's arguments, see page 13, filed 15 December 2006, with respect to

objection to the drawings have been fully considered and are persuasive. The objection

of the non-Final Office Action mailed 15 September 2006 has been withdrawn.

Response to Arguments

~~Claim Rejections – 35 USC § 101~~

3.   Applicant's arguments filed 15 December 2006 have been fully considered but

they are not persuasive for the reasons set forth below.

4.   The Applicant argues "the evidence shows computer storage media includes

media for storage of information, such as computer-readable instructions. The computer

storage media includes RAM and ROM. Therefore these claims are currently in

compliance with 35 U.S.C. 101."

The Applicant respectfully disagrees. The Examiner refers to the Applicant's

specification, page 26, lines 6-7, which recites "By way of example, and not limitation,

computer-readable media may comprise computer storage media **and** communication

media." Since computer-readable media includes a communication media that

embodies a modulated data signal such as a carrier wave, the claim deals with non-

statutory subject matter and unpatentable. Therefore, the rejection of claims 24-34

under U.S.C. 101 stands.

Claim Rejections - 35 USC § 101

5.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 24-34 are rejected under 35 U.S.C. 101 because the claimed invention is

directed to non-statutory subject matter.

As per claims 24-34, these claims recite "one or more computer-readable

medium containing computer-executable instructions" Based on the Applicant's

specification, page 26, lines 16-19, that reads "Communication media typically

embodies computer-readable instructions, data structures, program modules or other

data in a modulated data signal such as a carrier wave or other transport mechanism

and includes any information delivery media." However these data signals are not

tangible, and cannot tangibly embody a computer program or process since a computer

cannot understand/realize (i.e. execute) the computer program or process when

embodied on the data signal. Computer program or processes are only realized within

the computer when stored in a memory or storage element (such as RAM or ROM).

Therefore, a data signal does not meet the "useful, concrete, and tangible" requirement

as set forth in *State Street*, 149 F.3d at 1373, 47 USPQ2d at 1601-02, and hence claims

25-32 are non statutory under 35 U.S.C. 101. Furthermore, the Examiner refers to the

Interim Guidelines

(http://www.uspto.gov/web/offices/pac/dapp/opla/preognotice/guidelines101_20051026.

pdf) for a further explanation of the use of signals and carrier waves.

Response to Argument

6.   Applicant's arguments with respect to claims 1-38 have been considered but are

moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

8.   Claims 1-38 are rejected under 35 U.S.C. 103(a) as being anticipated by a non-

patent literature titled "Efficient Filtering of XML Documents for Selective Dissemination

of Information" by Mehmet Altinel, et al., 26th VLDB Conference, 2000, pages 53-64

(known hereinafter as Altinel) in view of a non-patent literature titled "On Efficient

Matching of Streaming XML Documents and Queries" by Sailaja et al, University of

British Columbia, Canada, 2002, pages 1-20 (known hereinafter as Sailaja).

As per claims 1, 7, 15, 24, and 35, Altinel teaches a method, comprising:

receiving an input (i.e. *"There are two main sets of inputs to the system: user profiles and data items*

(i.e., documents). User profiles describe the information preferences of individual users. In most systems

these profiles are created by the users, typically by clicking on items in a Graphical User Interface." The

preceding text clearly indicates that receiving an input is an input to the system by the user.)(Page 54,

section 2.1); traversing an opcode tree that includes a plurality of opcode nodes which

together define opcodes that should be executed to evaluate a plurality of queries (i.e.

"XPath provides a flexible way to specify path expressions. It treats an XML document as a tree of nodes;

XPath expressions are patterns that can be matched to nodes in the XML tree." "In contrast, in SDI

systems, large numbers of queries are stored, and the documents are individually matched to the

queries." "In order to handle prefix evaluation, List Balance uses a stack which keeps track of the

traversed *element nodes in the document."* The preceding text clearly indicates that an opcode tree is an

XML document and opcode nodes are tree of nodes in an XML document.)(Page 54, section 2.2; page

55, section 3; Page 59, section 5.1); executing each of the opcode nodes in the opcode tree

as each opcode node is encountered in the traversal to evaluate the plurality of queries

against the input (i.e. *"The Query Index is used to match documents to individual XPath **queries**."*

"The events that drive the execution of the Filter Engine are generated by the XML Parser (as described

*in the following section). In the XFilter **execution** model, a profile is considered to match a document*

when the final state of its FSM is reached. The Query Index is built over the states of the XPath queries."

The preceding text clearly indicate that execution takes place within the Xfilter execution model, where

opcode nodes, which are nodes within an XML documents, and plurality of queries are Xpath

queries.)(Page 56, section 4.1).

Altinel does not explicitly teach the method wherein the input comprises

elemental language units; generating at least some of the elemental language units into

opcodes; hierarchical nature; maintaining the opcode tree that is used during

processing by making a copy of the opcode tree; and updating the opcode tree copy.

Sailaja teaches the method wherein the input comprises elemental language

units (i.e. Figure 1 illustrates the elemental language units, where Parts (Q), (P,R), are elemental

language units.)(Figure 1; Sections 1, 3, and 4); generating at least some of the elemental

language units into opcodes (i.e. Figure 1 further exemplifies the generating at least some element

units into opcode, where Part (Q), which exemplifies elemental language unit and opcodes which is

exemplified by 'Name', 'Brand'. Since Sailaja focuses on XML, an ordinary person skilled in the art

understands that XML tags are sets of instructions that are used to create 'Name' and 'Brand,' but not

necessarily limited to just creating 'Name' and 'Brand'.)(Figure 1, Sections 1 and 4); hierarchical

nature (i.e. Figure 1 clearly illustrates the hierarchical nature, which is a data tree node showing query

labeling. To avoid cluttering of Figure 1, node numbers were omitted, however further explained in

Example 11.)(Figure 1; Section 1); maintaining the opcode tree that is used during processing

by making a copy of the opcode tree (i.e. "With each data tree node, we associate three lists: the

QL (for query labeling) list, which will eventually contain those queries answered by the (subtree rooted at

the) node, a list called CML (for chain matching list) that tracks which queries have so far been matched

and how far, and an auxiliary list called PL (for push list) that is necessary to manage CML..." The

preceding text and Figures 3 and 4 illustrates maintaining the opcode tree, which is tracking queries that

have been answered and making a copy of the opcode tree is the three different lists QL, CML, and PL

which are copies of the data tree node.)(Figure 3; Section 4); and updating the opcode tree copy

(i.e. "With each data tree node, we associate three lists: the QL (for query labeling) list, which will

eventually contain those queries answered by the (subtree rooted at the) node, a list called CML (for

chain matching list) that tracks which queries have so far been matched and how far, and an auxiliary list

called PL (for push list) that is necessary to manage CML..." The preceding text clearly indicates the use

of the auxillary list, PL, which pushes the list. An ordinary person skilled in the art understands that when

a push is made, it clearly states that an update is being performed.)(Figure 3; Section 4).

It would have been obvious to a person of ordinary skill in the art at the time of

Applicant's invention to modify the teachings of Altinel with the teachings of Sailaja to

include the method wherein the input comprises elemental language units; generating at

least some of the elemental language units into opcodes; hierarchical nature;

maintaining the opcode tree that is used during processing by making a copy of the

opcode tree; and updating the opcode tree copy with the motivation to perform efficient

filtering of XML documents for large-scale information dissemination systems (Altinel,

Abstract).

As per claim 2, Altinel teaches a method, the executing step further comprising

using an intermediate result to execute an opcode node when the opcode node includes

one or more ancestor opcode nodes that have been executed to derive the intermediate

result (Page 56, section 4).

As per claim 3, Altinel teaches a method, the executing step further comprising

executing a single opcode node to evaluate at least a portion of at least two of the

plurality of queries (Page 54, section 2.1, 2.2; page 56, section 4, 4.1).

As per claims 4, 10, 23, and 27, Altinel teaches a method, the multiple queries

further comprising Xpath queries (i.e. *"The Query Index is used to match documents to individual*

Xpath queries.")(Page 56, section 4, 4.1).

As per claims 5, 8, 19, 29, and 37, Altinel teaches a method, the executing step further comprising executing a branch node to execute multiple opcode nodes that depend from the branch node, the branch node including an indexed branch lookup · function (i.e. Figure 5 depicts an example of executing multiple nodes in Figure 5, section a, titled Example Queries and Corresponding Path Nodes, where the path nodes are multiple opcode nodes that depend from the branch node.)(Page 59, Figure 5).

As per claims 6, 9, 31, 32 and 38, Altinel teaches a method, further comprising a hash function as the indexed branch lookup procedure (i.e. Figure 5 depicts an example of a hash table. An ordinary person skilled in the art anticipates the use of a hash function when using a hash table.)(Page 59, Figure 5).

As per claim 11, Altinel teaches an opcode tree data structure, further comprising at least one shared segment that corresponds to multiple queries (Page 56, section 4, 4.1; page 57, section 4.2).

As per claim 12, Altinel teaches an opcode tree data structure, wherein a single execution of the shared segment evaluates at least a portion of each of the multiple queries (Page 56, section 4.1).

As per claim 13, Altinel teaches an inverse query engine containing the opcode tree data structure (i.e. *"For this purpose, similar to traditional SDI systems, the Filter Engine component of Xfilter contains an inverted index, called the Query Index."*)(Page 56, section 4.1).

As per claims 14, 18, and 36, Altinel teaches an opcode tree data structure, further comprising a branch node that includes references to more than two dependent opcode nodes (i.e. Figure 3a, titled Example Queries and Corresponding Path Nodes clearly indicate that a branch node is '//b' and more than two dependent opcode nodes are /*/c/d)(Page 57, Figure 3).

As per claim 16, Altinel teaches a query evaluation system, further comprising an input module configured to receive an input (i.e. *"There are two main sets of inputs to the system: user profiles and data items (i.e., documents). User profiles describe the information preferences of individual users. In most systems these profiles are created by the users, typically by clicking on items in a Graphical User Interface."* The preceding text clearly indicates that receiving an input is an input to the system by the user.)(Page 54, section 2.1) that is evaluated against each of the plurality of queries when the query processor executes the opcode nodes (i.e. *"The Query Index is used to match documents to individual XPath queries." "The events that drive the execution of the Filter Engine are generated by the XML Parser (as described in the following section). In the XFilter execution model, a profile is considered to match a document when the final state of its FSM is reached. The Query Index is built over the states of the XPath queries."* The preceding text clearly indicate that execution takes place within the Xfilter execution model, where opcode nodes, which are nodes within an XML documents, and plurality of queries are Xpath queries.)(Page 56, section 4.1).

As per claim 17, Altinel teaches a query evaluation system, further configured to receive a SOAP (Simple Object Access Protocol) message as the input that is evaluated against the plurality of queries (Page 56, sections 4, 4.1).

As per claim 20, Altinel teaches a query evaluation system, further comprising an interim results cache that stores results of opcode node executions that are used in the execution of subsequent opcode nodes (Page 56, sections 4, 4.1).

As per claim 21, Altinel teaches a query evaluation system, further comprising a filter table that stores the plurality of queries, the filter table further including a reference to the opcode tree (Page 54, section 2.1; page 55, section 2.2; page 56, section 4.1).

As per claim 22, Altinel teaches a query evaluation system, an opcode object common to multiple queries further comprising an opcode object that is in a similar location of an opcode object sequence at the beginning of the multiple queries (Page 56, section 4.1).

As per claim 25, Altinel teaches a computer-readable media, wherein the first segment of opcode nodes includes ancestor opcode nodes of the second opcode node (Page 56, section 4.1; page 57, section 4.2; page 58, sections 4.3, 5).

As per claim 26, Altinel teaches a computer-readable media, the executing opcode nodes further comprising executing each opcode node a single time (i.e. *"The Query Index is used to match documents to individual XPath* **queries.** *" "The events that drive the execution of the Filter Engine are generated by the XML Parser (as described in the following section). In the XFilter* **execution** *model, a profile is considered to match a document when the final state of its FSM is reached. The Query Index is built over the states of the XPath queries."* The preceding text clearly indicate that execution takes place within the Xfilter execution model, where opcode nodes, which are nodes within an XML documents, and plurality of queries are Xpath queries.)(Page 56, section 4.1).

As per claim 28, Altinel teaches a computer-readable media, further comprising executing one or more branch nodes to execute one or more opcode nodes that depend from the branch node (Page 56, sections 4, 4.1).

As per claim 30, Altinel teaches a computer-readable media, further comprising executing one or more indexed branch nodes to execute a plurality of opcode nodes that depend from the branch node, the plurality of opcode nodes including a similar comparison function (Page 56, section 4.1).

As per claim 33, Altinel teaches a computer-readable media, further comprising receiving an input that is evaluated against the plurality of queries using the opcode tree (i.e. *"There are two main sets of inputs to the system: user profiles and data items (i.e., documents). User profiles describe the information preferences of individual users. In most systems these profiles are created by the users, typically by clicking on items in a Graphical User Interface."* The preceding text clearly indicates that receiving an input is an input to the system by the user.)(Page 54, section 2.1).

As per claim 34, Altinel teaches a computer-readable media, further comprising a

compiler configured to execute each query in the plurality of queries to derive the

opcode nodes (i.e. *"The Query Index is used to match documents to individual XPath **queries**." "The*

events that drive the execution of the Filter Engine are generated by the XML Parser (as described in the

*following section). In the XFilter **execution** model, a profile is considered to match a document when the*

final state of its FSM is reached. The Query Index is built over the states of the XPath queries." The

preceding text clearly indicate that execution takes place within the Xfilter execution model, where opcode

nodes, which are nodes within an XML documents, and plurality of queries are Xpath queries.)(Page 56,

section 4.1).

Conclusion

9.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Farhan M. Syed whose telephone number is 571-272-7191. The examiner can normally be reached on 8:30AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Gaffin can be reached on 571-272-4146. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

FMS

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